National Search and Rescue Secretariat

The New SAR Initiatives Fund (NIF) Final Report 1999-2000

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* Not Available

Executive Summary

The New SAR Initiatives Fund (NIF) was established by the federal government in 1988 to provide funding for projects that would enhance search and rescue in Canada. The NIF is managed by the Federal Coordination division at the National Search and Rescue Secretariat (NSS), on behalf of the Lead Minister for Search and Rescue.

NIF proposals are submitted to the NSS, for review by an authorized NIF federal or provincial/territorial sponsoring organization. Proposals are reviewed by the NSS and scored based on their merit by the Interdepartmental Committee on Search and Rescue (ICSAR) then ranked in order of priority. Approved proposals are funded in order of priority based on the availability of funds.

The NIF provides annual funding for new and continuing projects that address at least one of the following six categories:

- Integration of the National Search and Rescue Program (NSP)
- Collection of Search and Rescue (SAR) Data
- SAR Prevention
- Research and Development (R & D)
- Volunteers
- Response

This report summarizes the accomplishments of NIF projects that were completed during (or in some cases prior to) the fiscal year 1999 – 2000. Many of the reports list "deliverables" or tangible products that exist as a result of the NIF funding. To obtain further information on any of the deliverables please contact the sponsor/project manager listed at the bottom of each report.

This year, efforts have been made to make the final report an interactive tool that communicates the essence of the program. Emphasis has been placed on the benefits and accomplishments of the projects and on making this information easily accessible to the public. Photographs and images have been included throughout the report as a means to market individual projects and organizations.

To ensure the accessibility of the results of the NIF on a yearly basis, this report is also available electronically from our website (www.nss.gc.ca) in both a pdf version (printable) and an interactive version that allows the reader to view many of the deliverables as well as access hot links to the sponsoring departments and/or project partners.

For further information regarding the New SAR Initiatives Program or this document, please contact the National Search and Rescue Secretariat at 1-800-727-9414 or www.nss.gc.ca.

For further information regarding a specific project, please contact one of the project contacts listed at the bottom of any project summary page.

Special thanks to all NIF Sponsors and Project Partners

NIF Sponsors:

Environment Canada (Meteorological Service of Canada)
Department of Fisheries and Oceans (Canadian Coast Guard)
Department of National Defence (Canadian Forces)
Parks Canada Agency
Royal Canadian Mounted Police
Transport Canada
Alberta Disaster Services
British Columbia Provincial Emergency Program (BC PEP)
Manitoba Emergency Management Organization
New Brunswick Emergency Measures Organization
Newfoundland Department of Justice
Nova Scotia Emergency Measures Organization
Nunavut Emergency Services
Northwest Territories Emergency Services Division
Emergency Measures Ontario
Prince Edward Island Emergency Measures Organization
Sûreté du Québec
Saskatchewan Emergency Planning
Yukon Emergency Measures Organization

1999-2000 NIF Project Partners:

Canadian Avalanche Association (CAA)
Lifesaving Society
SMARTRISK
Canadian Recreational Canoeing Association (CRCA)
International Submarine Engineering Ltd. (ISE)
Memorial University of Newfoundland
St. Lambert Fire Department
London, ON Police Service
Municipality of Chatham-Kent

Acronyms and Abbreviations

The following is a list of commonly used acronyms and abbreviations used in this report:

TERMINOLOGY

GPS – Global Positioning System
GSAR – Ground Search and Rescue
NIF – New SAR Initiatives Fund
NSP – National SAR Program
PFD – Personal Flotation Device
PEP – Provincial Emergency Program
PSA's – Public Service Announcements
R & D – Research and Development
SAR – Search and Rescue

SPONSORING ORGANIZATIONS

Federal:
DFO (CCG) – Department of Fisheries and Oceans (Canadian Coast Guard)
DND (CF) – Department of National Defence (Canadian Forces)
EC (MSC) – Environment Canada (Meteorological Service of Canada)
NSS – National Search and Rescue Secretariat
PC – Parks Canada Agency (formerly CH – Department of Canadian Heritage)
RCMP – Royal Canadian Mounted Police
TC – Transport Canada

Provincial/Territorial:
AB – Alberta
BC – British Columbia
MB – Manitoba
NF – Newfoundland
NWT – Northwest Territories
ON – Ontario

Environment Canada
(Meteorological Service of Canada)

Weather, Winds, and Waves – Inner South Coast, British Columbia

Financial Summary			
FY 97/98:	$ 47,200	**NIFID #:**	97077
FY 98/99:	$ 35,000	**Project #:**	EC 1/97
Total exp.:	**$ 82,200**	**Category:**	Prevention
		Sponsor:	EC (MSC)

This project was sponsored by Environment Canada (Meteorological Service of Canada) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The objective of the *Weather, Winds, and Waves – Inner South Coast, British Columbia (BC)* project was to develop a marine book to educate and interact with boaters about the complexities of weather, winds, and waves in the inner south coast of BC. At the time of this report it was estimated that there were approximately 250,000 small craft boaters in this region.

In addition to topics such as weather climatology, this book introduced the new concept of "Pressure-slope Index", a measurement of the intensity and direction of pressure forces. This book also served to engage the mariner to use the changing weather situation for application to their daily circumstances.

Copies of the book were distributed to local mariners, marine training organizations, public libraries, yacht clubs, and was featured at the Vancouver Boat Show.

Future plans for this project included the creation of a CD ROM based on this book (see final summary report p.9).

Deliverables

- Book: The Wind Came all Ways

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Great Lakes Drizzle Icing Characterization Experiment (Glaze Ice)

Financial Summary			
FY 97/98:	$ 400,000	**NIFID #:**	97078
FY 98/99:	$ 150,000	**Project #:**	EC 2/97
FY 99/00:	$ 150,000	**Category:**	Collection of SAR Data
Total exp.:	**$ 700,000**	**Sponsor:**	EC (MSC)

This project was sponsored by Environment Canada (Meteorological Service of Canada) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The objective of the *Great Lakes Drizzle Icing Characterization* project was to collect measurements of the aircraft icing environment associated with freezing precipitation. This field project included 100 hours of research flights into storm regions (in Southern Ontario and Quebec Regio ns) where freezing drizzle was observed or forecasted to develop.

During the project, a large and unique data set was obtained. This data set was an important tool for the aviation industry to use in their attempts to define new certification standards and influenced safety requirements for aircrafts certified for flight in icing conditions. Other project activities included: assessments of the Rosemount icing detector; improved understanding of the formation mechanisms for freezing precipitation in order to improve forecasts; and, the completion of a Canadian surface climatology for freezing rain and drizzle.

The results yielded from this project had a direct impact on Search and Rescue aircraft through improved forecasts, safer certification requirements, and increased pilot awareness and training.

Deliverables

- Various publications

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Development of a 3rd Generation Aircraft Icing Forecasting Model

Financial Summary			
FY 97/98:	$ 80,000	**NIFID #:**	97079
FY 98/99:	$ 120,000	**Project #:**	EC 4/97
FY 99/00:	$ 120,000	**Category:**	R & D
Total exp.:	**$ 320,000**	**Sponsor:**	EC (MSC)

This project was sponsored by Environment Canada (Meteorological Service of Canada) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of this project was to improve the level of aviation safety by increasing the avoidance of icing conditions. To achieve this objective, a 3rd generation aircraft icing model was developed that predicts icing on a 35 kilometre (km) horizontal grid scale, in terms of icing type (cloud drops or freezing precipitation) and intensity (magnitude/severity of the icing).

The project consisted of three phases: Model development, testing and validation, and operational implementation. After the model had been developed, various testing occurred to compare the 3rd generation forecast model to previous forecasting models. Conventional forecast algorithms predicted classical (a melting ice crystal-supercooling drop process) formation conditions, however, could not accurately predict non-classical conditions (a condensation-collision-coalescence formation process).

The testing and the operational implementation phases determined that the 3rd generation model produced forecasts of classical and non-classical freezing precipitation that were more accurate than earlier forecast algorithms.

As a result of this project, pilots now receive better aircraft icing forecasts during flight planning.

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Lake Diefenbaker Weatheradio

Financial Summary			
FY 98/99	$ 41,786	**NIFID #:**	98007
Total exp.:	$ 41,786	**Project #:**	EC 1/98
		Category:	Prevention
		Sponsor:	EC (MSC)

This project was sponsored by Environment Canada (Meteorological Service of Canada) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The *Lake Diefenbaker Weatheradio* served to aid in reducing the number of water related SAR incidents and deaths among the boating community on the East half of Lake Diefenbaker, Saskatchewan.

A Weatheradio transmitter was installed at Douglas Provincial Park on the East end of the lake. The East end was chosen because it contains the majority of the recreational boating traffic and marinas.

This project allowed anyone with a Weatheradio or a Marine Band Radio with weather frequencies to access weather information and warnings 24-hours a day, 365 days a year. This easy access to weather information allowed people to better plan their trips based on up-to-date weather information and to remain informed during their outing of any changes in the weather.

The Douglas Provincial Park station opening was advertised in the local newspapers and information sessions were conducted with the Lake Diefenbaker Marine Association. Several local marinas were given Weatheradios and supplied with information pamphlets.

Discussions with the Park Superintendent concluded that the Weatheradio has become a topic of conversation amongst the local population and was frequently used to obtain weather information. Local RCMP and others in the SAR community were the best providers of information about whether or not the Weatheradio broadcast was effective in reducing the number of SAR incidents on the lake.

Deliverables

- Information pamphlet

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Marine Weather for the BC Coast – CD ROM

Financial Summary			
FY 98/99	$ 0	**NIFID #:**	98008
FY 99/00:	$ 104,236	**Project #:**	EC 2/98
Total exp.:	**$ 104,236**	**Category:**	Prevention
		Sponsor:	EC (MSC)

This project was sponsored by Environment Canada (Meteorological Service of Canada) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The objective of the *Marine Weather for the BC Coast* project was to help mariners understand the marine weather of the British Columbia coast so that they can operate with greater safety.

A CD ROM entitled "Coastal Weather for British Columbia Mariners" was developed and contained materials from two successful Environment Canada publications (also previously funded by the New SAR Initiatives Fund), the "Marine Weather Hazards Manual" and "The Wind Came All Ways". Information included: wind, wave and cloud formation; weather patterns; weather maps; animated satellite pictures; the Canadian Coast Guard Safe Boating guide; and a virtual tour of the Pacific Weather Centre (where the forecasts are made). In addition, new information including the climatology of winds and waves based on 10 years of buoy data was developed at the Pacific Weather Centre.

This was the first CD ROM on marine weather targeting recreational boaters produced in Canada. The CD ROM was shown at the Vancouver International Boat Show (February 2000) and was given out to interested mariners for testing. Additional copies were distributed to local mariners, marine training organizations, public libraries, high schools, and yacht clubs. The CD ROM received positive feedback from its users.

Deliverables

- Coastal Weather for British Columbia Mariners – CD ROM

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CANWARN (Canadian Weather Amateur Radio Network) Radio System

Financial Summary			
FY 99/00:	$ 40,629	**NIFID #:**	99038
Total exp.:	**$ 40,629**	**Project #:**	EC 1/99
		Category:	Integration of the NSP
		Sponsor:	EC (MSC)

This project was sponsored by Environment Canada (Meteorological Service of Canada) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of the *CANWARN Radio System* was to provide a better severe weather detection network in New Brunswick so that more accurate and timely Severe Weather Warnings can be issued to the public and other consumers of weather information (e.g. Search and Rescue community). This objective required the expansion and enhancement of the existing provincial radio infrastructure as well as the development and delivery of Severe Weather Spotter training for radio users.

Expansion of the New Brunswick Weather Centre's (NBWC) existing CANWARN system involved installing and linking additional radio communication repeaters into some of New Brunswick's most severe weather prone areas.

The Meteorological Service of Canada (MSC) relies on reports from a network of trained Severe Weather Spotters across New Brunswick (of which CANWARN is a part) to confirm the existence of severe weather like tornadoes, large damaging hail, heavy rain, and other damaging winds. These reports are necessary fo r the MSC to prepare weather warnings to the public.

This project resulted in an increase in detection efficiency in the regions covered by the expansion and approximately 100 spotters were trained.

The expansion of trained CANWARN spotters across New Brunswick was expected to continue past project completion.

Deliverables

- CANWARN New Brunswick: A description of the CANWARN system in New Brunswick – PowerPoint presentation.
- Recognizing Severe Weather: Training information – PowerPoint presentation

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Johnstone Strait Automatic Weather Station

Financial Summary			
FY 99/00:	$ 66,000	**NIFID #:**	99036
Total exp.:	**$ 66,000**	**Project #:**	EC 5/99
		Category:	Collection of SAR Data
		Sponsor:	EC (MSC)

This project was sponsored by Environment Canada (Meteorological Service of Canada) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of the *Johnstone Strait Automatic Weather Station* was to increase the reported accuracy and reliability of meteorological conditions for marine and aviation safety. To achieve this, an automatic weather station was installed on Fanny Island, BC (central Johnstone Strait) to provide weather data for local marine traffic and forecasting purposes.

The data from the Fanny Island station is widely available to the marine community in the area as it was added to the automated text voice program for the Canadian Coast Guard (CCG) Continuous Marine Broadcast. All stakeholders (CCG, Provincial Government, mariners, and staff) were informed once the station was transmitting hourly reports.

The station provided effective weather data and revealed northwesterly winds that had previously gone undetected. As a result, the project received positive feedback from mariners and forecasters.

The project had future plans to include the observations to the Website at www.weatheroffice.com.

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Department of Fisheries and Oceans
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National Interactive Safe Boating Test – "Be a Better Boater"

Financial Summary			
FY 97/98:	$ 36,589	**NIFID #:**	97031
FY 98/99:	$ 438,500	**Project #:**	DFO 18/97
FY 99/00:	$ 485,656	**Category:**	Prevention
Total exp.:	**$ 960,745**	**Sponsor:**	DFO (CCG)

This project was sponsored by the Department of Fisheries and Oceans (Canadian Coast Guard) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The *National Interactive Safe Boating Test* both educated boaters about a variety of boating safety issues and served as a tool for gathering data about some unsafe boating habits that currently exist. The objective of the project was to promote boating safety regulations and encourage the boating population to get trained and obtain a boating safety operator card.

A multimedia campaign was launched including a poster ad, web site, thirteen 1-minute mini-tests, and a one-hour television show. The poster ad was distributed by twenty-four organizations and included participation from Reader's Digest (May issue), Boat Guide Magazine, and Boat for Sale Mag azine.

By March 31, 2000 the Interactive Safe Boating Test was presented at thirteen boat shows where 21,000 ballots were filled out. Participants could also take the test on-line. Anyone who participated in taking the test was eligible to win prizes.

Deliverables

- Poster ad
- Web site: http://www.betterboater.com
- One-hour television show (aired in September 2000)
- Thirteen one-minute mini-tests
- Summary Report

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Northwest Territories (NWT) Personal Flotation Device (PFD) Loaner Program

Financial Summary			
FY 97/98:	$ 15,249	**NIFID #:**	97007
FY 98/99:	$ 54,582	**Project #:**	DFO 22/97
FY 99/00:	$ 54677	**Category:**	Prevention
Total exp.:	**$ 124,508**	**Sponsor:**	DFO (CCG)

This project was sponsored by the Department of Fisheries and Oceans (Canadian Coast Guard) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The *NWT Personal Flotation Device (PFD) Loaner Program* placed PFDs in Eastern and Western Arctic communities with both high drowning rates and limited access to PFDs. The objective of the project was to increase both awareness and usage of PFDs in these communities.

This program made PFDs that were suitable for the culture and the environment available for residents to borrow by completing a sign-out sheet prior to use. When the PFD was returned, the user would fill out a brief questionnaire designed to gauge user attitudes towards the product borrowed. None of the communities had to re-stock any of the PFDs purchased for the program because all products were returned after use.

Communication activities were aimed at: The Office of Boating Safety (Central and Arctic Region); the Government of the Northwest Territories (Department of Transportation); Hamlet/Community Councils; Hunter and Trappers Associations; and Mustang Survival.

The PDF Loaner Program had an impact. Not only was there a noticeable increase in the use of PFDs in the participating communities, but also several communities requested that they take over the program once the NIF funding ended. The Office of Boating Safety saw this request as a positive step towards changing attitudes related to the use of PFDs.

In light of the success of this program, funding will be sought after to continue supporting this program in existing communities as well as develop the program in additional Central and Arctic communities.

Deliverables

- NWT Safe Boating Council PFD Loaner Program: Loan Form

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Canadian Coast Guard Auxiliary (CCGA) SAR Equipment Initiative

Financial Summary			
FY 98/99:	$ 354,335	**NIFID #:**	98011
FY 99/00:	$ 448,000	**Project #:**	DFO 1/98
Total exp.:	$ 802,355	**Category:**	Volunteers
		Sponsor:	DFO (CCG)

This project was sponsored by the Department of Fisheries and Oceans (Canadian Coast Guard) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The *CCGA SAR Equipment Initiative* increased the capability of the CCGA by providing each of their volunteer vessels (approximately 1,000-1,200) with necessary SAR and personal protection equipment. The project aimed at increasing both the effectiveness and the capability of CCGA volunteers by providing them with equipment to enable longer search periods while protecting them from the elements to ensure their safety and well being. As a result, search time was reduced as well as Crown liability for volunteers. The equipment included: personal flotation exposure suits; Fast Rescue Craft (FRC) cruise suits; cold weather gloves; line-throwing devices; high powered hand-held searchlights; night vision goggles; and rescue helmets.

Members of the CCGA have indeed reported a decrease in search time in several SAR incidents made possible through the use of the night vision equipment and high-powered search lights.

As a means of documenting the impact of this initiative, each regional CCGA organization will report on the use of the equipment during SAR operations and training exercises.

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Prevention of Boating-Related Fatalities and Injuries

Financial Summary			
FY 98/99:	$ 91,308	**NIFID #:**	98018
FY 99/00:	$ 25,000	**Project #:**	DFO 8/98
Total exp.:	**$ 116,308**	**Category:**	Prevention
		Sponsor:	DFO (CCG)

This project was sponsored by the Department of Fisheries and Oceans (Canadian Coast Guard) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The *Prevention of Boating Related Fatalities and Injuries* project promoted awareness of self-rescue techniques in various boating situations to prevent boating related fatalities and injuries. An integrated Public Awareness campaign (radio, television, newsprint and magazine components) was developed and delivered to males aged 17 years via the educational system, outreach channels, recreation, First Nation, and emergency services. All material was made available in English and French (some available also in Dene and Cree).

During the Fall of 2000 the products were distributed to: all Northern Saskatchewan high schools, Health Districts, Band Offices and the RCMP. At the time of this report, the full impact of the project was not yet known, however the products had been tested with various groups who provided positive feedback.

Deliverables

- "Be Your Own Hero" – video
- "Be Your Own Hero" – Teacher's Guide

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Coherent Ultra High Frequency (UHF) Radar

Financial Summary		NIFID #:	98026
FY 98/99:	$ 104,997	Project #:	DFO 10/98
FY 99/00:	$ 21,775	Category:	R&D
Total exp.:	$ 126,772	Sponsor:	DFO (CCG)

This project was sponsored by the Department of Fisheries and Oceans (Canadian Coast Guard) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The *Coherent Ultra High Frequency (UHF) Radar's* primary objective was to develop a prototype radar that could be used to evaluate the benefits of using UHF frequencies for the detection of small targets (i.e. liferafts and small icebergs) in high sea-states. The UHF spectrum was chosen because it provides a "window" where the clutter energy scattered back from a sea surface is significantly less than at other radar frequency bands. In addition, coherent radar operation could be achieved at UHF with off-the-shelf cell phone technology.

The project involved both development and assembly of the prototype radar. Following the assembling stage, a software suite was developed to capture and process the UHF radar echoes. The final stage involved extensive field tests.

The field tests included first the UHF Radar being tested in Newfoundland against conventional X-Band radar. Following this first field test, the UHF radar prototype was field tested in Prince William Sound, Alaska for 4 weeks. The benefits proven by both of these field tests included; that at intermediate and far ranges the amount of ocean clutter received by the UHF radar is less than that of standard marine radars; that the increase in ocean clutter received by the UHF radar with increasing wind speed is less than that of other band marine radars; that the coherent operation allows for enhanced detection of weak targets in the presence of clutter; and that Doppler processing may be used to remove clutter to detect weak slow moving targets.

Other organizations involved in this initiative included: Sigma Engineering Limited of St. John's Newfoundland (microwave radar equipment for field trials); Regional Citizens' Advisory Council of Valdez, Alaska (funding for Alaska field test); U.S. Coast Guard (helicopter support for the Alaskan field trial); the Ship Escort and Vessel System (vessel support for Alaskan field trial); and Auklet Charters of Cordova, Alaska (charter services and accommodations for Alaskan field trial).

Deliverables

- UHF Radar, Prince William Sound Field Program – Final Report (December 1999)
- Coherent Ultra High Frequency Radar, New SAR Initiatives Fund Final Report
- UHF Radar for Small Target Detection, paper to be presented at Oceans 2000 Conference
- Ocean Clutter Characteristics in a Doppler UHF Radar, NECEC '99 Proceedings, NF

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Creation of the "International Search and Rescue Society"

Financial Summary			
FY 98/99:	11,000	**NIFID #:**	98022
FY 99/00:	$ 4,720	**Project #:**	DFO 12/98
Total exp.:	**$ 15,720**	**Category:**	Integration of the NSP
		Sponsor:	DFO (CCG)

This project was sponsored by the Department of Fisheries and Oceans (Canadian Coast Guard) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The *International Search and Rescue Society (ISARS)* is an international non-profit organization of SAR practitioners that facilitates the exchange of information and knowledge on SAR. Individuals with a vested interest in SAR were invited to become members of ISARS, and publications made available to ISARS were posted on the web site so that they could be easily accessed by anyone interested.

The web site served as an effective means of communicating the intent of ISARS, as well as obtaining publications of interest, keeping informed on any upcoming SAR events of interest and informing viewers of new developments.

At the time of this report, the web site was being visited, unofficial membership was up to 25 people, and requests for publications was increasing (only the first publication was available at this time).

Further development of ISARS continued at the expense of the Canadian Coast Guard.

Deliverables

- Web site: http://www.isars.org

"Promoting SAR and saving lives through knowledge"

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Boating Foundation Phase II – Ice Rescue

Financial Summary			
FY 99/00:	$ 4,850	**NIFID #:**	99041
Total exp.:	**$ 4,850**	**Project #:**	DFO 1/99
		Category:	Response
		Sponsor:	DFO (CCG)

This project was sponsored by the Department of Fisheries and Oceans (Canadian Coast Guard) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of the *Boating Foundation Phase II – Ice Rescue* was to increase the Search and Rescue capacity of the St. Lambert, QC Fire Department to include the ability to conduct SAR missions year round. This initiative was the second of two phases to properly outfit the SAR team, the first phase provided equipment with standard water rescue equipment. Phase 2 involved further outfitting the team with equipment necessary to meet rescue needs on a body of water in freezing temperatures. The equipment chosen was the "Rescue Alive" an innovative ice rescue sled that provides for efficient victim recovery (see image).

As a result, the St. Lambert Fire Department (SLFD) is prepared to respond more effectively to SAR incidents year round and of various circumstances. At the time of this report the SLFD had already used the "Rescue Alive" to respond to an incident, and had remarked that they were extremely satisfied with the now available cold water/ice rescue equipment.

In the future, the SLFD would like to improve their SAR capability by upgrading their communication system and acquiring cold water exposure suits for responders.

© Rescue Alive

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Navigation Tools Education

Financial Summary			
FY 99/00:	$ 70,342	**NIFID #:**	99050
Total exp.:	**$ 70,342**	**Project #:**	DFO 4/99
		Category:	Prevention
		Sponsor:	DFO (CCG)

This project was sponsored by the Department of Fisheries and Oceans (Canadian Coast Guard) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

Navigation Tools Education increased the knowledge of modern navigation tools' (primarily Global Positioning System) capabilities and limitations among fishers and recreational boaters. Persons were also educated about how Global Positioning System (GPS) is used with Canadian Hydrographic Service (CHS) products (i.e. navigational charts, electronic charts, sailing directions).

Project activities included: conducting seminars on the use of GPS in various Atlantic Regions; visiting chart dealers to ensure up-to-date CHS products/services were available to clients as well as to ensure that dealers were aware of the initiative; participation in two boat shows (Halifax and St. John) to promote CHS products (yielded approximately 30,000 participants); seminars; and to raise public awareness of new developments in navigation tools; and the development of a thematic map with the intent of identifying high-risk or problem marine areas in need of CHS surveying/charting.

Communication activities were directed to the Atlantic Marine Trades Association, Canadian Coast Guard Auxiliary- Maritimes, Canadian Coast Guard – SAR and Marine Traffic Sections, Canadian Marine Advisory Council-Maritimes, Canadian Power and Sail Squadrons, Department of Fisheries and Oceans, Industry Canada, Maritimes Fisherman's Union, Office of Boating Safety, Transport Canada, and various Yachting Associations (Nova Scotia, New Brunswick, Prince Edward Island).

As a result of the project activities, 95 per cent of the 400 fishers and recreational boaters who attended GPS seminars indicated in post-seminar evaluations that they had increased their knowledge of GPS and 98 per cent had increased knowledge on the use of navigational charts. In addition, the development of the thematic map permitted the CHS to identify congested areas of incidents enabling them to select areas in need of additional surveying/charting to help prevent SAR incidents.

Deliverables

- GPS and NAD 83/NAD 27 – What you need to know – handouts at GPS Seminar
- Perils of Modern Navigation – Atlantic Boating News – Boat Show Edition – Feb./Mar 2000.
- Thematic Mapping Project – A report by Amanda Mills (March 2000).

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Safe Paddling Guide for Canoeing, Kayaking and Sea Kayaking

Financial Summary			
FY 99/00:	$ 27,000	**NIFID #:**	99058
Total exp.:	$ 27,000	**Project #:**	DFO 6/99
		Category:	Prevention
		Sponsor:	DFO (CCG)

This project was sponsored by the Department of Fisheries and Oceans (Canadian Coast Guard) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

This project aimed at educating paddlers on boating safety practices and reduce SAR cases by making free literature on Safe Paddling for Canoeing, Kayaking and Sea Kayaking available to the public sector. These activities were carried out in conjunction with manufacturers, various parks, Boy Scouts and Girl Guides.

Over the past ten years, participation in canoeing, kayaking and sea kayaking has expanded at a rapid rate. This population of boaters made up 27 per cent of all boating related drownings in 1996, which justified a safety campaign such as this one.

During this project, a camera-ready artwork sheet of clipart was produced, a website was designed and installed and a rough draft of the "Safe Paddling Guide for Canoeing" was completed. Due to an increase in staff turnover the project could not be completed within the set time limit, however the Canadian Recreational Canoeing Association (CRCA) planned on completing the project on its own.

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SKAD (Sea Kit Air Droppable) Dinghy Research and Development

Financial Summary			
FY 96/97	$ 55,000	**NIFID #:**	96026
FY 97/98:	$ 46,416	**Project #:**	DND 1/96
FY 98/99:	$ 105,000	**Category:**	Response
Total exp.:	**$ 206,416**	**Sponsor:**	DND

This project was funded by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1996/1997.

The objective of this project was to improve the delivery accuracy of the air dropped life raft package delivered by SAR aircraft to vessels in distress or victims already in the water. The kit consists of a minimum of two life rafts (maximum of four) containing survival equipment, which were tied to one another by a long rope. The objective of the delivery was to drop the rafts so that they landed upwind, and to either side of the victims. The rafts then drifted past the victims who are able to grab onto the rope and pull themselves into the nearest raft. This project involved changing the packaging and the deliv ery of the previously used life raft so that it would not blow away upon deployment from the aircraft.

Improving the packaging meant making the SKAD self-contained. As a result, all of the survival gear is now kept in a valise inside the raft. Improvements were also needed to the delivery of the SKAD. Previously, the raft began inflating prior to hitting the water leading to the raft being blown out of the victims reach, and increasing the risk of the raft flipping upside down making it impossible for victims to rescue themselves. The new delivery system was designed so that the raft inflates when it hits the water. This new system of delivery increases drop accuracy, and reduces the chance of drifting and/or the raft flipping upside down.

Development and trials of the packaging system and a revised method of delivery have proven successful. Field tests resulted in 12 out of 13 drops in which the rafts landed right side up.

As soon as the contents of the survival equipment that goes into the rafts is improved, the new kit will be acquired for the SAR aircraft fleet.

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Self Locating Datum Marker Buoy (SLDMB) and SLDMB Phase II

Financial Summary				
	PHASE 1	**PHASE 2**	**NIFID #:**	96027 & 98031
FY 96/97	$ 375,000	$0	**Project #:**	DND 2/96 & DND 1/98
FY 97/98	$ 26,775	$ 79,901	**Category:**	R & D
FY 98/99:	$ 0	$ 280,082	**Sponsor:**	DND
Total exp.:	**$ 401,775**	**$ 359,983**		

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1996/1997 (Phase 1) and 1998/1999 (Phase 2).

This project's objective was to develop a compact, air-deployable version of the Datum Marker Buoy previously developed by the Canadian Coast Guard (CCG). By using the CCG's research, testing and information, the project saved both money and development time. By incorporating the latest enhancements in technology, it was hoped that near real-time drift data could be sent directly to the appropriate Rescue Coordination Centre (RCC) to be used in developing search plans. The initial phase involved operational testing of the production buoys and Phase II involved the implementation of design modifications, environmental testing, and "Hazards of Electromagnetic Radiation to Ordinance" (HERO) testing.

ADM (Advanced Development Models) prototypes of the SLDMB buoys were tested during actual search and rescue cases (SAR VANESSA) and produced excellent results. Findings from field trials necessitated design modifications by the users that were later incorporated into the final production model of the SLDMB. These modifications included a redesign of the program access system utilizing easily accessed push buttons and channel display LEDs, and modification of the compressed gas activation system from an explosive squib to a spring firing pin device. This latter modification made the SLDMB safer and less expensive to ship since the product was no longer classed as dangerous cargo.

The SLDMB has been successful as proven by its field trials. During SAR VANESSA, the rescue of the only survivor was directly attributed to the accuracy of the SLDMB drift information in determining survivor drift patterns. The SLDMBs were also used during the Swiss Air 111 incident to help track floating debris and aid the search for human remains. The SLDMB development team has received various awards including the Deputy Minister's Commendation to the DREA (Defence Research Establishment Atlantic) staff in 1998 and the Distinctions 98 "Technology in Government" Gold Medal.

Deliverables

- Video – Self Locating Data Marker Buoy

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Eyesafe Laser-Based Obstacle Warning System (ELBOWS)

Financial Summary			
FY 96/97:	$ 0	**NIFID #:**	96038
FY 97/98:	$100,000	**Project #:**	DND 13/96
FY 98/99:	$ 78,200	**Category:**	Response
FY 99/00:	$ 251,800	**Sponsor:**	DND
Total exp.:	**$ 430,000**		

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1996/1997.

The objective of the *ELBOWS* project was to develop an Advanced Development Model (ADM) to demonstrate the benefits of using an eyesafe laser-based radar system for obstacle warning during low-level helicopter search and rescue (SAR) flying operations. Obstacles such as power lines are a threat to pilots and many accidents are caused by the pilot colliding with things that he/she cannot see. Prior to this project it was very dangerous for helicopters to conduct SAR missions in reduced visibility conditions at a low level.

ELBOWS represented a tool to enhance flight safety and enabled helicopters to embark on SAR missions regardless of visibility by scanning the environment with a laser and activating a warning system to alert pilots of hidden obstacles.

The project involved investigating other promising technologies, developing and building the new technology, integrating the system for flight evaluation, and conducting performance tests.

The project continues to evolve by conducting various field trails and by developing an audio warning component of the technology.

Deliverables

- A Laser Based Obstacle Avoidance Systems for Low Flying Aircraft- report
- ALOAS Description and Flight Trial Results - report
- HELLAS: Obstacle Warning System for Helicopters – Video
- ALOAS – Airborne Laser Based Obstacle Avoidance System - Video

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Ice Release Tape for Helicopter Rotor Blades

Financial Summary			
FY 97/98:	$ 80,000	**NIFID #:**	97065
FY 98/99:	$ 80,000	**Project #:**	DND 13/97
FY 99/00:	$ 107,750	**Category:**	R & D
Total exp.:	**$ 267,750**	**Sponsor:**	DND

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The *Ice Release Tape for Helicopter Rotor Blades* project developed an ice repellant coating in the form of a tape applied to the blades, to prevent the formation of ice or enhance the shedding of ice from helicopter blades once the ice has formed.

The project team designed an apparatus to characterize the increase in the weight of ice as it builds up on rotor blades and the rate of this build up. Many different tape coatings were tested using this apparatus and the coating that was chosen was able to maintain ice release characteristics for up to 96 hours of exposure to water spray.

Throughout the testing, the ice release tape was applied to "mock up" rotor blades. At the time of this report, no testing had been conducted on actual helicopters because the impact that the ice release tape would have on the electrical system was unknown.

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Integration of SAR Imaging Technologies

Financial Summary			
FY 97/98:	$ 178,000	**NIFID #:**	97069
FY 98/99:	$162,000	**Project #:**	DND 14/97
Total exp.:	**$ 340,000**	**Category:**	Response
		Sponsor:	DND

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The objective of the *Integration of SAR Imaging Technologies* project was to integrate previously developed imaging techniques to detect embedded targets in an image. The techniques that were integrated included: acquisition and processing of satellite imagery; dye and pigment development for target enhancement; and artificial intelligence.

Research activities were conducted in three main areas: dye chemistry for target enhancement, including dying different materials as well as imaging of the final products with the Landsat filters of the Xybion multispectral camera; investigation of new image processing techniques, specifically fusion imagery from different sensors; and the development of an automated target detection algorithm which operates with a multispectral camera.

Future activities included participation in search exercises, the use of automated detection algorithms in other types of camera systems (i.e. the Wescam System), and the investigation of the use of Hyperspectral imagery for Search and Rescue to prepare for its appearance on the newer satellites.

This project has led to increased efficiency when locating lost aircraft/watercraft/victims.

Deliverables

- Integration of SAR Imaging Technologies - report

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SARPAL (Search and Rescue Palletized Air Launchable) for the CC130

Financial Summary			
FY 97/98:	$ 456,107	**NIFID #:**	97052
FY 98/99:	$ 466,000	**Project #:**	DND 15/97
FY 99/00:	$ 40,072	**Category:**	Response
Total exp.:	**$ 962,179**	**Sponsor:**	DND

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The objective of *SARPAL* was to develop an air-droppable, self-propelled marine vehicle (MV) capable of remote operation and control from an aircraft for use in marine search and rescue (SAR). The complete system consisted of a marine vehicle, a master remote console, and an auxiliary remote console.

During the project, two MV's were built. The first was used to evaluate its air-droppability and was dropped into the water using a crane to verify that the structure and mounting of the propulsion subsystem could withstand the shock loads of an airdrop. This model proved that it could withstand drops from 16 ft. high, demonstrating the ability for the major structural components to withstand the shock loading anticipated with aerial delivery. A second test proved successful when the MV demonstrated stability under the wind created by a helicopter. A second model was built to evaluate seaworthiness. During this evaluation the MV was tested in local and rough water trials up to sea state 5, had an endurance capacity of 38 hours at 4.75 knots in calm seas, and remote controllability from a marine vessel and from a Cessna aircraft using manual control and waypoint following (latitude and longitude coordinates).

The development of this autonomous rescue vehicle may have improved the way that people will be rescued at sea. The SARPAL may have eliminated the need for SAR Rescue personnel to enter frigid, rough waters and put their own lives at further risk.

Deliverables

- Final Report – International Submarine Engineering Ltd. (ISE)
- Drop tests and sea trials – video
- CD ROM

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CASARA (Canadian Air Search and Rescue Association) Training in Resolute Bay

Financial Summary			
FY 99/00:	$ 25,888	**NIFID #:**	99010
Total exp.:	**$ 25,888**	**Project #:**	DND 1/99
		Category:	Response
		Sponsor:	DND

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of this project was to provide training to airplane operators and residents of the newly formed CASARA unit in Resolute Bay, NWT. During the project, a team of CASARA instructors visited Resolute Bay twice to train the NWT unit on proper SAR procedures (approximately 25 people were trained).

Within weeks of becoming operational, the NWT CASARA unit was responsible for saving the life of a snowmobiler. Following the report of an overdue snowmobiler, the RCMP and CASARA conducted a search. During the search a CASARA member spotted the victim and a ground team was soon dispatched to recover him. The victim survived after being overdue for 2 days.

The Resolute Bay CASARA unit put a training program in place to train new members and keep current members qualified.

This project resulted in an increase in North of 60° SAR Resources and has made a CASARA unit capable of responding to SAR missions.

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CASARA (Canadian Air Search and Rescue Association) Air/Ground Communications

Financial Summary			
FY 99/00:	$ 178,370	**NIFID #:**	99006
Total exp.:	**$ 178,370**	**Project #:**	DND 4/99
		Category:	Response
		Sponsor:	DND

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of the *CASARA Air/Ground Communications* project was to provide radio communications between CASARA aircraft and ground personnel to allow vital SAR (Search and Rescue) information to be relayed to the Rescue Coordination Centre (RCC), provincial authorities and other agencies involved in SAR missions and training exercises.

The project objective was achieved by purchasing 57 radios and distributing them to CASARA units across Canada. The radios were continuously used during CASARA training exercises and on SAR missions and radio performance was continuously evaluated.

The radios greatly improved communications between CASARA aircraft and ground facilities. The radios allowed important information to be passed accurately and quickly, resulting in reduced rescue response time.

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Install an MCC (Mission Control Centre) Network Server

Financial Summary			
FY 99/00:	$ 67,463	**NIFID #:**	99016
Total exp.:	**$ 67,463**	**Project #:**	DND 5/99
		Category:	Response
		Sponsor:	DND

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in fiscal year 1999/2000.

The objective of the project was to increase the MCC's speed of processing distress alert data by providing a new network server to unload administrative documents that were slowing down the processing of active international distress data.

The function of the MCC is to process distress alerts with locations received from distress beacons via the satellites and automatic ground receiving stations of the COSPAS-SARSAT international distress alerting and locating system. The MCC is responsible for: determining which passing satellites the receiving stations should track and receive data from; routing alert and location to the proper region MCC's; alerting the corresponding national authorities of beacons that have been detected; passing information of air and marine beacons transmitting within the Canadian area of responsibility to the correct Rescue Coordination Centre (RCC); and relaying information on the Personal Locator Beacon Canada to the region's police force.

Time is critical, and the speed at which the alert data can be passed from the time the beacon is activated to the time the correct search and rescue authorities are informed can make the difference between life and death of a victim seriously injured or immersed in cold water. The MCC Network Server resulted in data being processed 2-3 minutes faster per case, which should result in a large difference in the percentage of lives saved.

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CASARA (Canadian Air Search and Rescue Association) Handheld VHF/FM Radios

Financial Summary			
FY 99/00:	$ 105,740	**NIFID #:**	99007
Total exp.:	**$ 105,740**	**Project #:**	DND 6/99
		Category:	Response
		Sponsor:	DND

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The *CASARA Handheld VHF/FM Radios* project provided ground vehicles with the capability of communicating with CASARA aircraft while participating together on ELT (Emergency Locator Transmitter) cases. The project involved purchasing and distributing 145 handheld VHF/FM radios to units across the country.

The radios were used extensively during SAR events. One of these events involved an airplane carrying two people that crashed near Thunder Bay, Ontario. A search aircraft received an ELT but cloud cover was too thick to allow the crew to search effectively. As a result, CASARA organized ground crews, equipped with the new VHF/FM radios, who communicated with the Hercules above. After using the VHF/FM homing sets to locate the crash site, the victims were located.

This project improved communications between CASARA aircraft and ground crews and contributed to saving lives shortly after being acquired.

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Install a Geostationary SAR Satellite Local User Terminal (GEOLUT) at the Canadian Technical Evaluation Centre (CTEC)

Financial Summary			
FY 99/00:	$ 188,259	**NIFID #:**	99015
Total exp.:	**$ 188,259**	**Project #:**	DND 10/99
		Category:	Response
		Sponsor:	DND

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiative Fund (NIF) in Fiscal Year 1999/2000.

The objective of the project was to create a GEOLUT Research and Development facility and to provide a backup GEOLUT in the event that one of the operational GEOLUT's at the Rescue Coordination Centre (RCC) in Trenton, Ontario could not operate.

A GEOLUT is the automatic ground receiving facility for emergency beacon distress signals via satellites in Geostationary orbit. The GEOLUT's in Trenton, Ontario track two satellites carrying SAR Repeaters; GOES East and GEOS West. These satellites are located 36,000 miles above the equator and monitor approximately one third of the earth at any given time. This permits an almost immediate detection of emitting beacons.

Aside from having a backup GEOLUT, the new CTEC GEOLUT could be used for interferer signal fingerprinting and in LEO (Low-Earth-Orbit)/GEO processing research.

At the time of this report, the facility was operational and functioning well at the Uplands airport in Ottawa.

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SARSAT (Search and Rescue Satellite) Transportable Display

Financial Summary			
FY 99/00:	$ 11,315	**NIFID #:**	99021
Total exp.:	**$ 11,315**	**Project #:**	DND 12/99
		Category:	Response
		Sponsor:	DND

This project was sponsored by the Department of National Defence and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of this project was to increase public awareness of the capabilities of the SARSAT system by acquiring a SARSAT Transportable display. The display consisted of one 8' x 10' mural and two TV/VCR units to simultaneously show a SARSAT video in English and French.

The SARSAT Transportable display helped increase the number of 406 MHz beacon users while reducing the number of 121 MHz beacon subscribers, resulting in a reduction of SAR costs by reducing the number of false alerts.

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National Search and Rescue Secretariat

National Land and Inland Water Needs Study
(Canadian Ground Search and Rescue Study)

Financial Summary			
FY 96/97:	$ 99,200	**NIFID #:**	96045
FY 97/98:	$159,812	**Project #:**	NSS 1/96
FY 98/99	$ 73,651	**Category:**	Response
FY 99/00	$ 21,348	**Sponsor:**	NSS
Total exp.:	**$ 354,011**		

This project was sponsored by the National Search and Rescue Secretariat and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1996/1997.

The goal of the *Canadian Ground Search and Rescue (GSAR) Study* was to establish a baseline for the collection of information concerning GSAR in Canada. The objectives of the study were to gather and analyze GSAR data, followed by the creation of profiles for a GSAR delivery system, activities and populations at risk of producing GSAR incidents and GSAR delivery.

In Canada, the world of GSAR is scattered across many jurisdictions and agencies and involves the codes, standards, policies and regulations of different organizations/authorities. Without national standards, insurance and liability remain a concern for SAR authorities and providers. This project served as the first step towards attaining a national standard for SAR in Canada.

Communication activities for this project included a press advisory that was delivered to the media in both official languages and two reporter interviews resulting in two newspaper articles.

The Canadian GSAR Study has resulted in the establishment of a national GSAR database, as well as two meetings with training representatives from each province and territory to discuss common standards and to attempt to harmonize those that are unique to each jurisdiction. The latter has helped in exposing common problems and developing common approaches to address some of these challenges.

Deliverables

- The Report of the Canadian Ground SAR Study
- Lost Person Behavior
- Survey on Canadian Ground SAR
- National Ground SAR Ideas Kit

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Canadian Beacon Registry Computer Purchase

Financial Summary			
FY 98/99:	$ 5,000	**NIFID #:**	98086
Total exp.:	**$ 5,000**	**Project #:**	NSS 2/98
		Category:	Response
		Sponsor:	NSS

This project was sponsored by the National Search and Rescue Secretariat and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The *Canadian Beacon Registry Computer Purchase* project's main objective was to purchase a computer and office equipment to enable the creation of the new consolidated Canadian Beacon Registry. The Canadian Beacon Registry is managed by the National Search and Rescue Secretariat and includes the amalgamation of the Personal Locator Beacon (PLB), the Emergency Locator Transmitter (ELT), and the EPIRB (Emergency Position Indicating Radio Beacon) registries. At the time of this report, there were 1150 PLB's, 80 ELT's, and 4024 EPIRB's in the Registry.

In order to maintain a large registry, a computer was purchased that was high speed, easily upgraded, and contains maximum storage space. Office equipment, such as a filing cabinet, was purchased to maintain Beacon Registry records.

The new Registry has increased the speed and efficiency at which information can be accessed and the effectiveness of SAR nationwide has increased.

The public was informed of this project through various media including: SARSCENE Magazine, Brochures, Pamphlets and Fact Sheets. All of these communication activities informed readers that the Canadian Beacons are to be registered through the National Search and Rescue Secretariat.

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Parks Canada Agency

SMARTRISK Communications Program

Financial Summary			
FY 97/98:	$ 445,000	**NIFID #:**	97050
FY 98/99:	$ 105,000	**Project #:**	CH 4/97
FY 99/00:	$ 105,000	**Category:**	Prevention
Total exp.:	**$ 655,000**	**Sponsor:**	PC

This project was sponsored by the Parks Canada Agency and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The *SMARTRISK Communications Program* project provided the HEROES program with improvements to ensure its continued success. The HEROES program consists of a traveling multi-media road show designed to help youth understand the risks in their everyday lives and show them how to take those risks in the smartest way possible so that they can enjoy life to its fullest.

The improvements involved upgrading some of the equipment used for the show, developing/augmenting appropriate images and messages, developing criteria and conducting an evaluation, augmenting the Teacher's Resource Guide with an outdoor recreation-based teaching module, developing material (i.e. public service announcements, customizable posters, updated video) to assist in marketing and promotion, and the development of a French version of the Heroes show (Les Heros).

As a result of these improvements, the HEROES show can be staged in a greater variety of locations thus making it accessible to both English and French communities.

Deliverables

- An Evaluation of Heroes (English only)
- A Teacher's Resource Guide for HEROES
- "REWIND" – A short documentary about the HEROES program.
- "Prepare for Impact" – Posters
- HEROES Brochure and Information Kit (pending)

SMARTRISK™

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Self Reliance/Safety Video for Wilderness Canoeists in Remote Areas (Prince Albert National Park)

Financial Summary			
FY 98/99:	$ 39,000	**NIFID #:**	98005
Total exp.:	**$ 39,000**	**Project #:**	CH 1/98
		Category:	Prevention
		Sponsor:	PC

This project was sponsored by the Parks Canada Agency and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The *Self Reliance/Safety Video for Wilderness Canoeists in Remote Areas* was a video that could be used by all organized canoe groups in Prince Albert National Park (PANP) and provided information to groups before their trip to encourage better preparation and reduce the number and intensity of incidents. This video illustrated Parks Canada's pro-active approach to safety issues and also encouraged visitors to experience PANP by canoeing.

Parks Canada has since received requests from such groups as Scouting Canada for multiple copies of the video to be used as a regular part of the Saskatchewan Division training program. Copies of the video were also distributed to operators in PANP, outfitters and canoe retailers throughout the province, local libraries, and several other Canadian national parks with similar safety issues.

Deliverables

- Video - "On an Even Keel"

© Parks Canada, Frank Burelle

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Avalanche Risk Management in Eastern and Atlantic Canada (ECAP)

Financial Summary			
FY 98/99:	$ 168,750	**NIFID #:**	98002
FY 99/00:	$76,000	**Project #:**	CH 3/98
Total exp.:	**$ 244,750**	**Category:**	Prevention
		Sponsor:	PC

This project was sponsored by the Parks Canada Agency and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

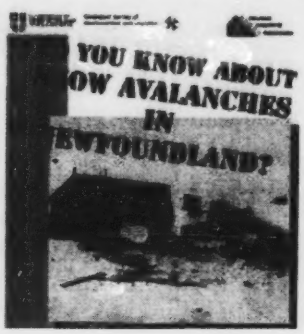
The purpose of the *Avalanche Risk Management in Eastern and Atlantic Canada* project was to reduce the risk of avalanche accidents in Eastern Canada by assessing risk values, increasing avalanche knowledge, and developing techniques and materials for avalanche education.

During the project the following activities were completed: avalanche accidents in Newfoundland were documented, professional development for Newfoundland Geological Service was facilitated, avalanche training was conducted, a permanent source of avalanche information and materials was developed and public awareness of avalanche safety training opportunities in Newfoundland was promoted. These activities resulted in an increased local prevention and response capacity.

Future activities included exploring the use of the materials and techniques produced by the project in other parts of Eastern Canada (i.e. Quebec) due to the increasing number of serious avalanche incidents.

Deliverables

- Sledding in Avalanche Terrain, Reducing the Risk – Book
- Recreational Avalanche Course Advanced Avalanche Safety Course Manual
- Newfoundland Avalanche Risk Awareness – poster and brochure
- CD ROM of digitized photographs



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Solicitor General
(Royal Canadian Mounted Police)

Junior PEP (Provincial Emergency Program) Organization – Lucerne Elementary/Secondary School

Financial Summary			
FY 96/97:	$ 2,000	**NIFID #:**	96049
FY 97/98:	$ 2,000	**Project #:**	RCMP 2/96
Total exp.:	**$ 4,000**	**Category:**	Response
		Sponsor:	RCMP

This project was sponsored by the Royal Canadian Mounted Police (RCMP) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1996/1997.

The objective of the project was to increase the SAR response capability in the New Denver/Silverton area, BC by forming a Junior PE P organization. The formation of the organization involved designing a training program that covered emergency preparedness, first aid and SAR. This training program was then presented to Grade 11 and 12 students and resulted in approximately 4 classes of trained individuals.

By creating a SAR training program for the students the organization had a constant pool of trained personnel, students were better informed in the areas of safety and prevention, and the school's level of preparedness increased in the event that a disaster hit the school.

After the training was completed in New Denver, interest was expressed from SAR volunteers in Langley, BC, as well as the community of Langford, BC.

This project contributed to a more organized and structured approach and an overall community sense of preparedness.

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NWT SAR Training Program

Financial Summary			
FY 98/99:	$ 115,125	**NIFID #:**	98063
Total exp.:	**$115,125**	**Project #:**	RCMP 1/98
		Category:	Response
		Sponsor:	RCMP

This project was sponsored by the Royal Canadian Mounted Police (RCMP) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The objective of the project was to ensure that qualified searchers and search managers were available to coordinate local search operations and to develop the distance education model (correspondence and/or RCMP intranet). To achieve this objective, 21 SAR courses were offered as well as 2 training exercises; resulting in 227 persons trained in SAR in both the Eastern and the Western NWT.

Over the course of the project SAR courses included: Basic Ground SAR; Search Manager training; Winter Indoctrination; and Marine Boat SAR. A Home-Study manual was also revised and used in the SAR courses. This manual is NWT specific and was used widely throughout the region.

Both Arctic regions benefited from SAR training and all of the communities felt the impact of having local residents able to effectively respond to SAR incidents.

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VHF-FM Hand Held Radios and Repeaters

Financial Summary			
FY 99/00:	$ 416,460	**NIFID #:**	99025
Total exp.:	**$416,460**	**Project #:**	RCMP 2/99
		Category:	R & D
		Sponsor:	RCMP

This project was sponsored by the Royal Canadian Mounted Police (RCMP) and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The purpose of the *VHF-FM Hand Held Radios and Repeaters* project was to develop an enhanced and more effective communication system between the RCMP, Ground SAR personnel, National Defence SAR aircraft, the Canadian Coast Guard vessels and other emergency agencies during a Ground SAR response.

The VHF-FM radios that were purchased provide the capacity to contain all of the on-scene SAR channels in order to enable a coordinated search, thus resulting in a more effective recovery of victims. A Portable Repeater System was constructed to provide communications beyond the line of site VHF-FM and remote linking. The repeater provides a unique and powerful communication resource to all of the emergency responders.

The improved telecommunications system provides seamless communications between many different systems used during SAR operations. The entire system consists of two VHF repeaters, one 800 MHz repeater, a Trunk Mobile Radio (TMR), batteries, complete with charges and a 60-foot telescopic mast and antennas.

At the time of this report, several mock runs had been completed showing the success of the new system. The system would greatly benefit from the finalization of manuals showing the step-by-step procedures for system set-up. This manual would ensure that proper and safe procedures are followed in the deployment of this unit.

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Transport Canada

Integration of a Global Positioning System (GPS) Receiver in a 406 MHz Emergency Locating Transmitter (ELT)

Financial Summary			
FY 97/98	$ 150,000	**NIFID #:**	97085
FY 98/99	$ 200,000	**Project #:**	TC 1/97
FY 99/00:	$ 50,000	**Category:**	R & D
Total exp.:	**$ 400,000**	**Sponsor:**	Transport Canada

This project was sponsored by Transport Canada and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The objective of the project was to integrate a GPS interface into an ELT allowing the use of geostationary satellites to provide a near instantaneous alert with location data. The GPS component allows the ELT to transmit the last known position of the aircraft.

Prior to this project an ELT signal would be picked up by satellites that would then move in relation to the ELT and pick up new signals as it moves into a new position. These two signals are compared to one another by using a technique called the Doppler Shift and the ground station software can then determine the location of the ELT (a time consuming process).

A GPS interface was miniaturized and incorporated into a prototype ELT. The success of the project was indicated by the completion of the COSPAS-SARSAT Type Approval testing for an ELT beacon with GPS location.

This project enhanced emergency beacon capabilities by allowing data to be known almost instantly, reducing the overall time required to complete a rescue operation.

Follow up activities included further field testing of the ELT (see final summary report p. 49)

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Investigation Study to Reduce the Cost of 406 MHz ELT's (Emergency Locator Transmitters)

Financial Summary			
FY 98/99:	$ 50,000	**NIFID #:**	98048
Total exp.:	**$ 50,000**	**Project #:**	TC 1/98
		Category:	R & D
		Sponsor:	Transport Canada

This project was sponsored by Transport Canada and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

This project investigated ways to reduce the cost of the 406 MHz ELT designed for use in an aircraft.

The entire ELT unit was broken down and its parts were examined individually to determine areas where costs could be reduced. It was determined that the electrical and mechanical design approach, the expensive lithium manganese dioxide battery cells, and the labour-intensive assembly were elements that could be altered.

Based on the determination of which elements could be altered, the following recommendations were made: redesign of the electronic circuit; redesign of the reference oscillator; reduction of the output power of the 121.5 MHz secondary frequency to the level now used in marine beacons; and regulations to require carriage of 406 MHz ELTs to achieve the economies of scale realized by higher manufacturing volumes. If these recommendations were implemented, the cost of the 406 MHz ELT's would have been reduced from $3,000.00 to approximately $1,500.00.

Future activities included the investigation into the use of lithium sulphur dioxide battery cells in ELTs, and future research and development into low cost 406 MHz ELTs.

Deliverables

Reducing the Cost of 406 MHz ELTs: An Investigation

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Evaluation of a 406 MHz ELT (Emergency Locating Transmitter) –AF (Automatic Fixed) and a GPS (Global Positioning System)-ELT

Financial Summary			
FY 99/00:	$ 100,000	**NIFID #:**	99028
Total exp.:	**$ 100,000**	**Project #:**	TC 1/99
		Category:	R & D
		Sponsor:	Transport Canada

This project was sponsored by Transport Canada and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of the project was to test a 406 MHz ELT and a 406 MHz ELT with a GPS interface in an environment as close as possible to the actual operating environment. These field trials consisted of operating the equipment in an aircraft.

The tests were divided into two phases: Phase 1 tested the ELT, and Phase 2 tested the GPS interface ELT. During both phases, testing was conducted in numerous locations in Canada.

The field trials proved that 406 MHz beacon technology including GPS location improves location accuracy, hence reducing overall search time.

Deliverables

- Evaluation of an EPIRB with an Integrated GPS Receiver - report

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Alberta

Calgary Area Search and Rescue (SAR) Radio System

Financial Summary			
FY 99/00:	$ 45,000	**NIFID #:**	99068
Total exp.:	**$ 45,000**	**Project #:**	AB 1/99
		Category:	Volunteers
		Sponsor:	Alberta

This project was sponsored by Alberta Disaster Services and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The *Calgary Area SAR Radio System* project enhanced the communication system of the Calgary Regional SAR groups (Calgary SAR and Foothills SAR). Various radios and supporting equipment were researched with the Emergency Amateur Radio Society to determine the most effective system. Following the initial assessment, 66 radios, 3 base stations, 2 repeaters, and base antennas were purchased.

This project resulted in improved communication in SAR throughout Southern Alberta. The radios proved to be an invaluable asset at the Pine Lake tornado disaster near Red Deer, Alberta (July 14, 2000).

In the future, a National SAR Radio Frequency would be beneficial, as searches are not bound to provincial boundaries.

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British Columbia

SALMO SAR Communications Enhancement

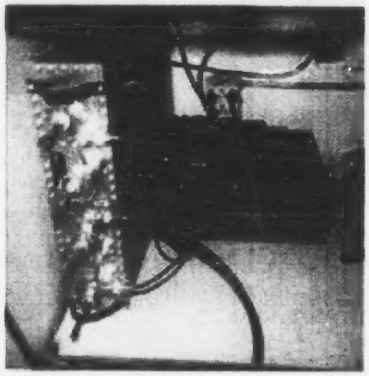
Financial Summary			
FY 99/00:	$ 5,247	**NIFID #:**	99066
Total exp.:	**$ 5,247**	**Project #:**	BC 1/99
		Category:	Volunteers
		Sponsor:	BC

This project was sponsored by the British Columbia Provincial Emergency Program (BC PEP) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The *SALMO SAR Communications Enhancement* expanded the existing range of communications from 8 km to 40 km by installing a Kenwood TKR-720 Repeater.

During the project period, the SALMO SAR group communicated with the BC Ambulance Service, Fire Commissioners Office, RCMP and neighboring SAR groups. The repeater was installed in October 1999.

The installment of the repeater improved the efficiency of SAR volunteers in the field and will increase the safe recovery of victims. The SALMO SAR group has plans to investigate the future installation of a solar powered repeater in a remote location to further enhance the communications coverage area.



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Multi-Use Radios for Sunshine Coast SAR

Financial Summary			
FY 99/00:	$ 4,140	**NIFID #:**	99065
Total exp.:	**$ 4,140**	**Project #:**	BC 3/99
		Category:	Response
		Sponsor:	BC

This project was sponsored by the British Columbia Provincial Emergency Program (BC PEP) and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of the project was to provide search and rescue with essential radio communications unaffected by "dead zones" located in the rugged terrain of the Sunshine Coast. The project involved the purchase of 10 handheld and mobile VHF transceivers together with ancillary equip ment.

With the help of these multi-use radios search and rescue workers now have the means for clear communications on Sunshine Coast during SAR activities by utilizing various amateur radio club repeaters located on Vancouver Island.

SAR workers now have the ability to communicate in large areas including logging roads and mountainous terrain. In one case the search area was spread over 25 km.

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Manitoba

Formalized Ground Search and Rescue (GSAR) Volunteer Structure

Financial Summary			
FY 97/98:	$ 93,704	**NIFID #:**	97081
FY 98/99:	$ 106,004	**Project #:**	MB 1/97
FY 99/00:	$ 75,224	**Category:**	Volunteers
Total exp.:	**$ 274,932**	**Sponsor:**	Manitoba

This project was sponsored by Manitoba Emergency Management Organization and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1997/1998.

The objective of the project was to establish a formal Ground Search and Rescue (GSAR) Volunteer Structure in Manitoba. The project involved the development of a prevention program for lost persons, which included the distribution of over 100,000 safety brochures. The project also trained and equipped 16 SAR Teams (over 300 GSAR volunteers), as well as established "Manitoba SAR Inc." the organization responsible for coordinating annual provincial exercises and producing a quarterly newsletter.

At the time of this report, trained volunteers had been used on three extensive searches within a six- month time frame. One search involving a missing child, lasted ten days and included volunteers from different parts of the province.

This project resulted in an increased ability to respond to SAR incidents in Manitoba.

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Rebuilding and Development of The Pas' SAR Centre

Financial Summary			
FY 98/99:	$ 10,000	**NIFID #:**	98051
Total exp.:	**$ 10,000**	**Project #:**	MB 1/98
		Category:	Volunteers
		Sponsor:	Manitoba

This project was sponsored by Manitoba Emergency Management Organization and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The objective of the project was to reconstruct The Pas' Flying Club's clubhouse as "The Pas Search and Rescue Centre". The Pas (a town in Northern Manitoba) has many SAR Groups (volunteer and paid professional) who respond to ground search and rescue services. A relationship had been formed between the SAR Groups and the Flying Club whereby the SAR groups could use the Flying Club's clubhouse as their base. A central location was a key element for the efficient delivery of SAR services however the clubhouse was deteriorating.

The Pas SAR Centre was reconstructed using NIF Funding (18 per cent of the total required).

Upon completion of the project, The Pas SAR Centre became the focal point for all SAR activities in the area. Complete with meeting, administration, training, instruction and storage rooms; the Centre coordinated all types of SAR activities.

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Newfoundland

Victim/Casualty Hypothermia Bags - Newfoundland

Financial Summary			
FY 99/00:	$ 16,200	**NIFID #:**	99070
Total exp.:	**$ 16,200**	**Project #:**	NF 1/99
		Category:	Response
		Sponsor:	NF

This project was sponsored by the Newfoundland and Labrador Department of Justice and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The *Victim/Casualty Hypothermia Bags* project provided all SAR teams (27 teams) in the Province of Newfoundland and Labrador with hypothermia bags.

Newfoundland and Labrador had the highest drowning rate per capita in Canada (summer/winter). Due to inclement weather in this region, many SAR victims were found suffering from the effects of hypothermia. The provision of hypothermia bags to all Newfoundland and Labrador SAR teams increased the quality of service available to victims, victim survival rates and the safety and confidence among SAR members.

The province prepared an annual report containing statistical information on SAR operations. The FY 1999/2000 report contained information and statistics on the use of the hypothermia bags.

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Northwest Territories

Great Slave Lake Repeater Program

Financial Summary			
FY 99/00:	$ 52,000	**NIFID #:**	99073
Total exp.:	**$ 52,000**	**Project #:**	NWT 1/99
		Category:	Response
		Sponsor:	NWT

This project was sponsored by the Northwest Territories Emergency Services Division and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of the project was to enable effective communication on all parts of Great Slave Lake, NWT by purchasing and installing radio repeaters. Prior to this project SAR efforts had been hampered by the size of Great Slave Lake and by the inability to communicate between vessels that were more than 30 miles apart (the lake is 28,568 square km in area).

The Great Slave Repeater Program allowed for the complete coverage of Great Slave Lake via VHF (Very High Frequency) radio repeater system for emergency use by the boaters on the lake. Seven repeaters were installed in areas around the lake to ensure that all boaters would be able to contact emergency assistance if required. There are approximately 7-10 incidents per year on Great Slave Lake. There were 7 incidents in 2000, 5 incidents in 1999, 11 incidents in 1998.

All repeaters have been installed, tested, and are fully functional. Since the installation, numerous boaters have expressed their appreciation. Boat rental agencies and private industry were informed of the system.

Future plans included an information campaign (Spring 2001) to notify boaters that the system was available.

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Development/Implementation of Two SAR Volunteer Associations

Financial Summary			
FY 99/00:	$ 43,125	**NIFID #:**	99075
Total exp.:	**$ 43,125**	**Project #:**	NWT 4/99
		Category:	Volunteers
		Sponsor:	NWT

This project was sponsored by the Northwest Territories Emergency Services Division and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The objective of this project was to develop two SAR Volunteer Associations to assist northern communities and SAR volunteers in the areas of public education and training. The Associations were based in Fort Smith, Yellowknife, Fort Simpson and Deline. Preliminary work has been done with Norman Wells and Inuvik. Materials were developed on how to set up a non-profit association, funding opportunities, training issues and opportunities. Training was done in Fort Simpson and Yellowknife in Basic Search and Rescue techniques, Search Management and Urban Search and Rescue for the volunteer associations and community visits were made to introduce these materials and assist in the formation of the associations.

The formation of the SAR Volunteer Associations promoted: the importance of traditional knowledge as part of SAR response; an effective, efficient and standardized approach to all SAR events; and the prevention of SAR events. Community residents benefited from the training that was offered by the associations and the training led to an increased degree of competence and capability for the SAR teams.

Deliverables

- Information packages

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Prevention – Materials and Workshop

Financial Summary			
FY 99/00:	$ 87,500	**NIFID #:**	99074
Total exp.:	**$ 87,500**	**Project #:**	NWT 5/99
		Category:	Prevention
		Sponsor:	NWT

This project was sponsored by the Northwest Territories Emergency Services Division and received initial funding from the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

This project translated prevention information and materials into various Aboriginal languages and then distributed the information across the NWT. These materials were based on the topic of "Being Prepared". Many materials were first translated into Inuktituk and French, while various other languages were researched. Some Aboriginal languages exist only in oral form, therefore only the Public Service Announcements (PSA's) were translated.

The translation of this prevention material allowed residents of all communities to understand the messages in their own language. This will encourage the residents to accep t responsibility for their own safety when traveling on the land/water.

Deliverables

- Brochures
- PSA's
- Video

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Ontario

OSARAC (Ontario Search and Rescue Advisory Council) Baseline Study

Financial Summary			
FY 98/99:	$ 22,500	**NIFID #:**	98055
FY 99/00:	$ 22,500	**Project #:**	ON 3/98
Total exp.:	**$ 45,000**	**Category:**	Prevention
		Sponsor:	ON

This project was sponsored by Emergency Measures Ontario and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1998/1999.

The *OSARAC Baseline Study* identified the scope of the requirement for ground search and rescue (GSAR) in the province of Ontario by historically documenting the requirement for GSAR and analyzing the findings to determine the future needs for GSAR infrastructure, resources, and personnel.

The study used raw data from the Ontario Municipal and Provincial Police Automation Co-operative (OMPPAC), a computer-aided records management system. The findings of the study presented detailed descriptions of the need for GSAR in Ontario including: profiles of the typical lost person; identification of areas with high numbers of lost person incidents; and geographic/weather factors ha ving high correlation with lost person incidents.

The findings provided an informed appreciation for the scope of the requirement for GSAR in Ontario. From an operations perspective, the findings substantiated the location of volunteer SAR teams and the need for specialized equipment and training. All of these findings impacted GSAR readiness and response in Ontario.

The principal organizations involved in the study were the University of Toronto - Department of Geography (conducted study) and the Ontario Provincial Police (supervised the extraction of data and provided input into the categorization and analysis of the data).

Deliverables

- OSARAC Baseline Study - Final Report

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Near Urban SAR Helicopters Forward Looking Infra-red (FLIR) Trials

Financial Summary			
FY 99/00:	$ 70,342	**NIFID #:**	99078
Total exp.:	**$ 70,342**	**Project #:**	ON 2/99
		Category:	Response
		Sponsor:	ON

This project was sponsored by Emergency Measures Ontario and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The *Near Urban SAR Helicopters Forward Looking Infra-red (FLIR) Trials* project assessed the effectiveness of a FLIR line scanner mounted onto a helicopter to detect lost persons in a near-urban environment. This was accomplished by collecting information about the probability of detection (POD) when using FLIR in varying conditions of flight, weather, and ground environments.

A baseline was established by collecting information over a six-month period (summer, winter and fall) that described the POD from a helicopter without FLIR. Using this baseline, the POD using FLIR was collected and analyzed. The project concluded that a high degree of confidence could be drawn about the effectiveness of the equipment.

This assessment provided both insight into the importance of a process to assess the application of advanced technology in the GSAR environment before the equipment is introduced in day-to-day operations, as well as quantifying the effectiveness of FLIR. The SAR Community could use both outcomes to maintain and update their inventory of equipment and procedures to locate lost persons.

Deliverables

- Near Urban SAR Helicopter FLIR Trial: Final Report

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Search and Rescue (SAR) Planning Implementation Study

Financial Summary			
FY 99/00:	$ 52,500	**NIFID #:**	99077
Total exp.:	**$ 52,500**	**Project #:**	ON 3/99
		Category:	Collection of SAR Data
		Sponsor:	ON

This project was sponsored by Emergency Measures Ontario and received initial funding through the New SAR Initiatives Fund (NIF) in Fiscal Year 1999/2000.

The *SAR Planning Implementation Study* developed a SAR action plan for the Municipality of Chatham-Kent, ON. The study began by surveying local organizations to discern expertise and/or equipment in SAR operations. A draft plan was created which addressed how resources would be accessed and coordinated in order to support a lost person incident. The plan also identified and listed the resources that were not readily available within the municipality. A committee co-chaired by police and fire services was formed to identify the aspects of SAR response that required resources. The resources were listed in order of priority for future action.

This study resulted in an inventory of SAR expertise and resources located within the boundaries of Chatham-Kent as well as the creation of a committee responsible for SAR. Both of these results enhanced the municipality's readiness and response capability for a SAR incident.

This project succeeded in developing a SAR structure within the municipality of Chatham- Kent and enabled them to respond effectively to a SAR incident.

Deliverables

- Chatham-Kent SAR: Planning/Implementation Study (Final Report)

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Conclusion

During the fiscal year 1999-2000, eighty-nine (89) projects (54 new; 35 continuing) received initial funding from the New SAR Initiatives Fund (NIF). The NIF projects ranged in value from less than $5,000 to almost a million dollars per project, and from one year to three years in length.

In 1999-2000, NIF Audits were conducted on the following five projects:

- MB 1/97 – Establishment of a Formal GSAR Volunteer Structure for Manitoba
- NWT 1/98 – NWT SAR Training
- NWT 2/98 – NWT SAR Prevention
- ON 2/98 – Formation of a SAR Organization on the James Bay/Hudson Bay Coast
- SK 1/98 – Enhancement of the Saskatchewan SAR Program through Volunteers

For recommendations and management responses to the NIF audits, please contact the NSS Resource Centre (1-800-727-9414) or visit the NSS web site at www.nss.gc.ca.

The FY 99/00 NIF Final Summary Report demonstrates that through horizontal management and national cooperation, more than five dozen SAR initiatives were completed in 1999-2000, thus contributing to a more effective and efficient National Search and Rescue Program. From high-tech research and development projects, to various SAR prevention programs, to the support of local volunteer SAR groups, the New SAR Initiatives Fund continues to support SAR nationwide and helps to provide the resources necessary to prevent SAR incidences from occurring, and save lives in the event that an incident does occur.

The National Search and Rescue Secretariat would like to thank those who have participated in the program. It is through the continued cooperation and partnership between the NSS, NIF sponsors, and NIF Project Managers that the NIF continues to benefit SAR and its providers throughout Canada.